

Remarks

The claims have been amended by cancelling claims 1-6. Claims 7-11 remain in the application. Applicants respectfully submit that claims 7-11 are in allowable condition.

A. Section 102(e)

Claims 1-6 stand rejected under 35 USC § 102(e) as anticipated by the Tan patent. Since these claims have been canceled, the rejection is moot.

B. Section 103

Claims 7-11 were rejected under 35 USC § 103 as being unpatentable over Tan in view of Obagi. A § 103 obviousness rejection is analyzed under the standard set forth in Graham v. John Deere, 148 USPQ 459, (S. Ct 1966). First, a determination is made regarding the scope and content of the prior art. Next, the differences between the prior art and the claims at issue are ascertained. Finally, it may be necessary to resolve the level of ordinary skill in the pertinent art.

1. Scope and Content of the Prior Art

Tan teaches a laser treatment method primarily intended for removing a tattoo, or other abnormal pigmentation, from the skin of a living human being. That method requires pulsed laser treatment, on multiple occasions, at a wavelength of 600 to 1100 nanometers and a duration of 10 to 300 nanoseconds, resulting in a fluence at the skin of about 1 to 20 joules per square centimeter. The treatment method of Tan is preferably directed to the treatment of a skin site of 1 to 100 millimeters in diameter via an Alexandrite laser apparatus. In addition, an important aspect of the Tan invention is the

maintenance of irradiation on the patient's skin to effect a temporary white-gray skin coloration. The Tan patent makes passing reference to other dermatological applications, such as removal of foreign, endogenous matter in the skin and ablation of the skin, but does not enable such disclosure.

The Obagi patent discloses a method for healing damaged skin wherein a composition containing trichloroacetic acid, a surfactant, and an emulsifier are applied to the skin. This treatment may be supplemented by exposure of the area to which the composition has been applied to a source of ultraviolet radiation. Preferably, the ultraviolet radiation source also generates infrared radiation. The area is irradiated for a time and at a distance from the skin of the patient so that the skin burns and peels, but does not tan. The Obagi treatment method is intended to actually remove skin layers in a superficial or deep manner, based on the specifics of the composition and the irradiation time.

2. Differences Between the Prior Art and the Claims at Issue

By contrast, Applicants' invention is a novel laser treatment for psoriasis. The procedure selectively destroys blood vessels that underlie psoriatic lesions at depths of up to 1 millimeter and avoids excessive heating of the surrounding tissue. Applicants' invention requires a pulsed infrared laser source with an output of 700 to 1100 nanometers, a pulse duration of 200 microseconds to 20 milliseconds, and a treatment fluence of 5 to 50 joules per square centimeter at the skin surface.

In the preferred embodiment, a semiconductor diode laser or semiconductor diode laser array with an output of approximately 800 nanometer wavelength is pulsed for a period in the millisecond range. The target is preferably a blood vessel with a diameter of 10 to 300

micrometers, and each pulse illuminates an area of approximately 0.5 square centimeters.

The Obagi reference was cited by the Examiner as teaching that short exposure to light is beneficial to psoriasis. This teaching, in combination with the method of Tan, served as a basis for rejection with the view that it would have been obvious to one skilled in the art to apply light as disclosed by Tan to psoriatic areas for treatment thereof.

Applicants respectfully submit that the mention in the Obagi patent with respect to the use of light for psoriatic areas (column 1, lines 58-64) is merely a vague reference to materials and procedures that are less useful for the purposes to which the Obagi invention is directed. The disclosure of the Obagi patent is to a novel composition and method for healing skin via peeling and no enablement is given for selectively destroying blood vessels that underlie psoriatic lesions.

Furthermore, the Obagi patent limits the known light treatment of psoriatic areas primarily to ultraviolet light. In contradistinction to this, Applicants' invention claims a pulsed laser treatment method with a wavelength of light in the infrared range of the electromagnetic spectrum.

Applicants therefore respectfully contend that the Tan patent in view of the Obagi patent does not render Applicants' invention unpatentable over the prior art. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." Carella v. Starlight Archery, 231 USPQ 644, 647 (Fed. Cir. 1986) (citing ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 USPQ 929, 933 (Fed. Cir. 1984)). Here, the Tan patent does not teach a laser treatment method of the same laser type, fluence, or pulse duration as does the present application. It is impermissible to combine the Obagi patent, which mentions use of ultraviolet light in the

treatment of psoriatic areas, with the Tan patent, which discloses a laser method of similar wavelength as Applicants' invention, but of a different laser type, energy dose, pulse duration, treatment area, and treatment objective, to arrive at the invention claimed by the Applicants.

In view of the foregoing, it is submitted that claims 7-11 are in condition for allowance. Reconsideration of the claims is requested in view of the remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in the envelope addressed to: Commissioner of Patents and Trademarks, Washington, D. C. 20231, on April 4, 1994.

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